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10/688,076	10/17/2003	Jonathon Y. Simmons	8444.P1	8209

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EXAMINER

QUASH, ANTHONY G

ART UNIT	PAPER NUMBER
2881	

DATE MAILED: 02/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/688,076

Applicant(s)

SIMMONS ET AL.

Examiner

Anthony Quash

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/5/05.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

Applicants' amendment filed, 7/5/05 have overcome the objections to the specification and the drawings listed in the previous office action dated 12/30/04.

It is also noted that the applicants' amendment filed 7/5/05 has indicated that copending application 10/661,027 has been abandoned.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moreshead [EP 0845,799] in view of Tanaka [5,296,713]. With respect to the claims, 1-36, Moreshead [EP 0845,799] teaches an ion implanter electrode component for use in an ion implanter (col. 1 lines 5-8) having an electrically conductive electrode support frame (col. 3 lines 28-32) and adapted to generate an ion beam, comprising: an electrically conductive insert member (fig. 4) adapted to be inserted into the ion implanter support frame (fig. 2), the insert member comprising an electrode body portion defining an aperture (fig. 4 (84)), wherein the electrode body portion is positioned to receive the ion beam passing through the aperture, the insert member further

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comprising a plurality of retention flanges (fig. 3, (76)) adapted to engage the ion implanter support frame and to retain the electrode body portion in the aligned position within the ion implanter support frame and electrically coupled to the support frame (col. 3 lines 13-32). However, Moreshead [EP 0845,799] does not explicitly state the apparatus comprising a plurality of alignment pins to align the aperture of the insert member relative to the support frame. Moreshead [EP 0845,799] does however teach the insert member being engaged by sliding it into place laterally. In addition, Tanaka [5,296,713] does teach the use of alignment pins for engaging an aperture on a support while ensuring alignment. See Tanaka [5,296,713] col. 4 lines 45-52, and fig. 3. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a plurality of alignment pins to align the aperture of the insert member relative to the support frame, since the use of alignment pins for engaging an aperture on a support and sliding engaging in aperture on a support were art recognized equivalents for engaging an aperture to a support as taught in Tanaka [5,296,713].

Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tureira [5,420,415]. With respect to the claims 1,6,12,18,19,24,30,36 Tureira [5,420,415] are an ion implanter electrode component (see figs. 3 and 4) for use in an ion implanter having an electrically conductive electrode support frame and adapted to generate an ion beam comprising an electrically conductive insert member (see numerals 72-74 in figs. 11a-11c) adapted to be inserted into the ion implanter support frame (90) and/or support frame (80) (see fig. 4, col. 6 lines 5-25), the insert member

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comprising an electrode body portion (72) defining an aperture (78), the insert member further comprising a plurality of alignment pins (122, col. 8 lines 4-20, figs. 7a-8b), the alignment pins (122) positioned to engage the ion implanter support frame (90) and to align the aperture (78) in an aligned position relative to the ion implanter support frame (90), wherein the electrode body portion (72) is positioned to receive the ion beam passing through the aperture (78), the insert member further comprising a plurality of retention flanges (98, 81, figs. 3-4, column 6, col. 7 lines 1-35), the retention flanges (98, 81) adapted to engage ion implanter support frame (98,80) and to retain the electrode body portion 72 in the aligned position within the ion implanter support frame (98, col. 5 line 51 – col. 6 line 5, and col. 8 lines 4-20). In addition, Tureira [5,420,415] teaches the use of a self-centering clamping assembly (92). It would have been obvious to one having ordinary skill in the art at the time the invention was made to omit the self centering clamping assembly, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. As a result of omitting the self-centering clamping assembly, the alignment fixture (90) would then remain mounted to the housing during operation of the ion beam.

As per claims 2,7,13 Tureira [5,420,415] teaches the alignment pins (122) having a cylindrical pin body portion, which defines a cylindrical outer surface adapted to engage the ion implanter support frame (80,90, see fig. 8A and col. 8 lines 5-40).

As per claims 3,8,14, Tureira [5,420,415] teaches each alignment pin (screw) having a pin (screw) body which defines an outer surface adapted to engage the ion

implanter insert member alignment slot base surface, and a retention cap (col. 7 lines 30-35) having a width wider than the width of the pin (screw) body portion wherein each alignment pin (screw) retention cap defines a retention flange. See Tureira [5,420,415] figs. 3-4, col. 5 lines 25-30, col. 7 lines 1-40, col. 8 lines 5 – col. 9 line 15.

As per claims 4,9,15, Tureira [5,420,415] teaches the alignment pins (122), retention flange (98, see figs. 3-4), and the electrode body portion (72) being integrally formed wherein the insert member (72) is a one-piece member. See Tureira [5,420,415] col. 6 lines 25-68, and column 7.

As per claims 5,10,16, Tureira [5,420,415] teaches the support frame (80) having a flat face portion (73,74) and the insert member (72) having a flat face portion (fig. 11b), and wherein the insert member flat face portion is positioned engaged face to face with the support frame flat face portion (73-74) in the aligned and retained position. See Tureira [5,420,415] figs. 11a-11c, and col. 5 lines 50-68.

As per claims 11,17, Tureira [5,420,415] teaches a spring positioned between the insert member and the support frame to bias the insert member in the aligned and retained position. See Tureira [5,420,415] col. 3 lines 5-15, col. 9 lines 55-65.

As per claim 19, Tureira [5,420,415] teaches an electrically conductive support frame (90) adapted to generate an ion beam, comprising an electrically conductive insert member (72-74, fig. 11a-11c), adapted to be inserted into the ion implanter support frame (80,90, fig. 4 col. 6 lines 6-10), the insert member comprising body portion (72) defining an aperture (78), the insert member defining a plurality of alignment slots (105, col. 8 lines 30-41) each slot (105) having a base surface which

defines an alignment surface adapted to engaged by a support frame alignment pin (alignment screws 104a,104b), to align the insert member aperture (78, figs. 3-4, col. 8 lines 5-41), in an aligned position relative to the ion implanter support frame wherein the electrode body portion is positioned to receive the ion beam passing through the insert member aperture , the insert member further comprising a plurality of retention flanges (81,98) to retain the electrode body portion in the aligned position within the ion implanter support frame and electrically coupled to the support frame. See Tureira [5,420,415] figs. 3-4, col. 7 lines 1-55, and col. 8 lines 1-68.

As per claims 20-22, Tureira [5,420,415] teaches each alignment pin (screw) having a pin (screw) body which defines an outer surface adapted to engage the ion implanter insert member alignment slot base surface, and a retention cap (col. 7 lines 30-35) having a width wider than the width of the pin (screw) body portion wherein each alignment pin (screw) retention cap defines a retention flange. Tureira [5,420,415] also discloses each cylindrical pin (screw) body portion which defines a cylindrical outer surface adapted to engage the ion implanter insert member alignment slot base surface and wherein the component is made of graphite. See Tureira [5,420,415] figs. 3-4, col. 5 lines 25-30, col. 7 lines 1-40, col. 8 lines 5 – col. 9 line 15.

As per claim 23, Tureira [5,420,415] teaches the support frame (80) having a flat face portion (73,74) and the insert member (72) having a flat face portion (fig. 11b), and wherein the insert member flat face portion is positioned engaged face to face with the support frame flat face portion (73-74) in the aligned and retained position. See Tureira [5,420,415] figs. 11a-11c, and col. 5 lines 50-68.

As per claim 24, Tureira [5,420,415] teaches an electrically conductive electrode support frame which defines an aperture and an electrically conductive insert member adapted to be inserted into the ion implanter support frame, the insert member comprising an electrode body portion defining an aperture and adapted to be inserted into the support frame aperture, the insert member further comprising first and second alignment surfaces of which the first alignment surface being groove-shaped, wherein the support frame further comprises a first alignment pin positioned to engage the ion implanter insert member groove-shaped first alignment surface and a second alignment pin position to engage the ion implanter insert member second alignment surface to align the insert member aperture in an aligned position relative to the ion implanter support frame wherein the electrode body portion is positioned to receive the ion beam passing through the aperture, the insert member further comprising a plurality of retention flanges adapted to engage the ion implanter support frame and to retain the electrode body portion in the aligned positioned within the ion implanter support frame and electrically coupled to the support frame. See Tureira [5,420,415] abstract, figs. 1-8b, col. 5 lines 50 – column 8.

As per claim 25, Tureira [5,420,415] teaches the alignment pins (122) having a cylindrical pin body portion, which defines a cylindrical outer surface adapted to engage the ion implanter support frame (80,90, see fig. 8A and col. 8 lines 5-40).

As per claim 26, Tureira [5,420,415] teaches each alignment pin (screw) having a pin (screw) body which defines an outer surface adapted to engage the ion implanter insert member alignment slot base surface, and a retention cap (col. 7 lines 30-35)



having a width wider than the width of the pin (screw) body portion wherein each alignment pin (screw) retention cap defines a retention flange. See Tureira [5,420,415] figs. 3-4, col. 5 lines 25-30, col. 7 lines 1-40, col. 8 lines 5 – col. 9 line 15.

As per claim 27, Tureira [5,420,415] teaches the alignment pins (122), retention flange (98, see figs. 3-4), and the electrode body portion (72) being integrally formed wherein the insert member (72) is a one-piece member. See Tureira [5,420,415] col. 6 lines 25-68, and column 7.

As per claim 28, Tureira [5,420,415] teaches the support frame (80) having a flat face portion (73,74) and the insert member (72) having a flat face portion (fig. 11b), and wherein the insert member flat face portion is positioned engaged face to face with the support frame flat face portion (73-74) in the aligned and retained position. See Tureira [5,420,415] figs. 11a-11c, and col. 5 lines 50-68.

As per claim 29, Tureira [5,420,415] teaches a spring (71) positioned between the insert member and the support frame to bias the insert member in the aligned and retained position. See Tureira [5,420,415] figs. 1-8b, col. 5 lines 50-68.

As per claims 31-35, Tureira [5,420,415] teaches each alignment pin having a cylindrical body portion adapted to engage an alignment surface of the ion implanter insert member, defining an outer surface adapted to engage an alignment surface of the ion implanter insert member, and a retention cap having a width wider than the width of the pin body portion wherein each pin retention cap defines a retention flange. See Tureira [5,420,415] figs. 3-4, 10b, 11a-11c, columns 1-3, 5-9.

As per claim 36, Tureira [5,420,415] teaches an ion extraction electrode component for use in an ion implanter having an electrically conductive electrode support frame having round alignment pins, and adapted to generate an ion beam comprising, a one piece electrically conductive insert member adapted to be inserted into the ion implanter support frame, the insert member comprising an integral electrode body portion defining an aperture, the insert member further defining a plurality of rectangular alignment slots, each alignment slot having a base surface which defines an alignment surface adapted to be engaged by a support frame alignment pin (screw) to align the insert member aperture in an aligned position relative to the ion implanter support frame, wherein one base alignment surface is groove shaped. See Tureira [5,420,415] abstract, figs. 1-8b, col. 1 lines 50-68, col. 2 lines 25-68, col. 5 lines 50-68, columns 6-8.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-36 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Nos. 5,763,890 to Cloutier et al, and 5,523,652 to Sferlazzo et al. are considered pertinent to the applicants' disclosure. Cloutier

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[5,763,890] is considered pertinent due to its discussion on a cathode mounting for ion source with indirectly heated cathode. Sferlazzo [5,523,652] is considered pertinent to due to its discussion on a microwave energized ion source for ion implantation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Quash whose telephone number is (571)-272-2480. The examiner can normally be reached on Monday thru Friday 9 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571)-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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02/02/06